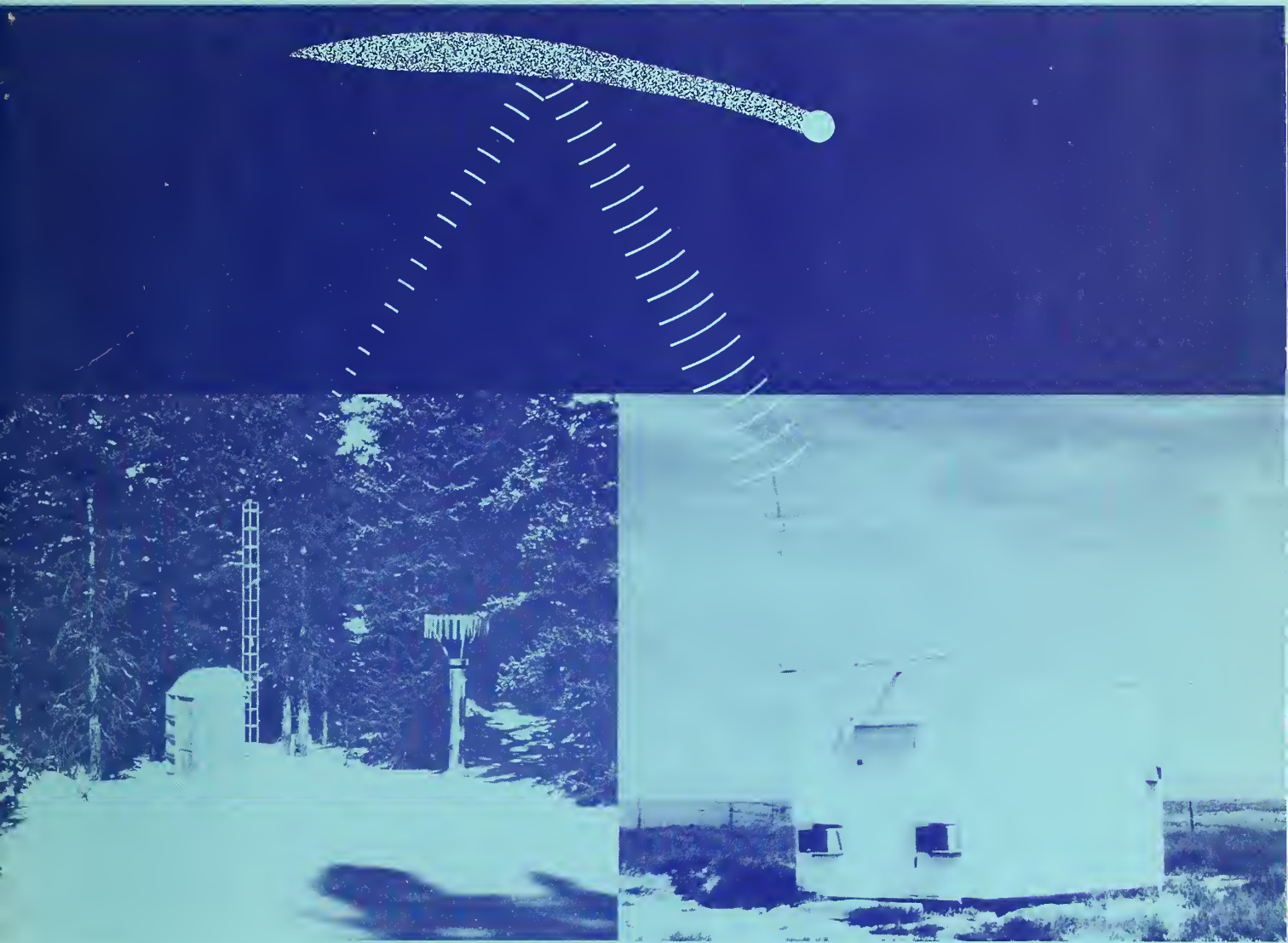


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WATER SUPPLY OUTLOOK FOR WYOMING



U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

STATE ENGINEER of WYOMING

AS OF
JUNE 1, 1978

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed inside the back cover of this report.

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: SOME OF THE DATA IN THIS REPORT HAVE BEEN RECEIVED THROUGH THE SOIL CONSERVATION SERVICE'S NEW SNOTEL SYSTEM WHICH TRANSMITS INFORMATION VIA THE SPACE AGED METEOR BURST METHOD FROM DATA SITES TO MASTER STATIONS LIKE THESE.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

| STATE | ADDRESS |
|--------------------|---|
| Alaska | Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504 |
| Arizona | Room 3008, Federal Building, Phoenix, Arizona 85025 |
| Colorado (N. Mex.) | P. O. Box 17107, Denver, Colorado 80217 |
| Idaho | Room 345, 304 N. 8th. St., Boise, Idaho 83702 |
| Montana | P. O. Box 98, Bozeman, Montana 59715 |
| Nevada | P. O. Box 4850, Reno Nevada 89505 |
| Oregon | 1220 S.W. Third Ave., Portland, Oregon 97204 |
| Utah | 4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138 |
| Washington | 360 U.S. Court House, Spokane, Washington 99201 |
| Wyoming | P. O. Box 2440, Casper, Wyoming 82602 |

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta T3C 1A6.



WATER SUPPLY OUTLOOK FOR WYOMING

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

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JUNE 1, 1978

Parts of Wyoming have received abnormally high rain and snowfall during May. April through September runoff volumes as forecast on May 1 can be expected to increase by 40 to 60% for the east slope of the Bighorns. The west slope of the Bighorns, parts of the Wind River Range and some of the Laramie Range have also received above normal monthly precipitation. Snowpack in the upper Snake River basin remains above the average June 1 figures.

BASIC DATA

SUPPLEMENTAL MEASUREMENTS

SNOW

| DRAINAGE BASIN and/or SNOW COURSE | THIS YEAR | | | PAST REC. | |
|-----------------------------------|----------------|------------------|-------------------|------------------------|-------|
| | Date of Survey | Snow Depth (In.) | Water Cont. (In.) | Water Content (inches) | |
| | | | | Last Yr. | Ave.† |

| | | | | | |
|--------------------------|-------|----|------|---|---|
| <u>DECEMBER 15, 1977</u> | | | | | |
| Carter Mountain | 12/14 | 7 | 1.2 | - | - |
| East Entrance | 12/17 | 26 | 6.3 | - | - |
| Lewis Lake Divide | 12/14 | 67 | 17.5 | - | - |
| Marquette Creek | 12/14 | 10 | 2.6 | - | - |
| Sylvan Pass | 12/17 | 33 | 8.8 | - | - |
| Togwotee Pass | 12/15 | 70 | 16.5 | - | - |
| Wolverine | 12/14 | 34 | 7.1 | - | - |

| | | | | | |
|------------------------|-------|----|------|-----|--------|
| <u>JANUARY 1, 1978</u> | | | | | |
| Afton R.S. | 12/30 | 10 | 1.8 | 0.6 | 2.2 a |
| Arizona | 12/28 | 44 | 11.4 | 1.2 | 7.8 |
| Aster Creek | 12/28 | 65 | 18.5 | 1.3 | 12.7 |
| Base Camp | 12/29 | 53 | 16.6 | 1.6 | 8.1 a |
| Canyon | 1/01 | 44 | 10.8 | 3.2 | 6.1 a |
| Carter Mountain | 12/30 | 7 | 1.1 | - | - |
| Casper Mountain | 12/30 | 15 | 3.5 | 4.2 | 5.9 a |
| CCC Camp | 12/29 | 34 | 9.4 | 0.8 | 4.9 |
| Cooke Station | 12/27 | 59 | 15.8 | 4.4 | - |
| Darby Canyon | 12/27 | 42 | 11.1 | 3.4 | - |
| East Entrance | 1/01 | 37 | 8.5 | 1.6 | 4.2 a |
| Fisher Creek | 12/27 | 84 | 25.2 | 7.9 | 14.4 |
| Freds Mountain | 12/27 | 56 | 14.6 | 2.9 | - |
| Glade Creek | 12/28 | 53 | 14.2 | 2.0 | 8.6 |
| Grassy Lake | 12/28 | 70 | 19.4 | 3.5 | 14.1 |
| Greys River Boundary | 12/29 | 32 | 7.6 | 1.0 | 4.0 |
| Grover Park Divide | 12/29 | 30 | 7.8 | 0.7 | 5.1 |
| Huckleberry Divide | 12/28 | 51 | 14.1 | 2.2 | 8.8 |
| Indian Meadows | 12/27 | 75 | 20.6 | 3.8 | - |
| Jackpine Creek | 12/27 | 42 | 11.2 | 1.4 | - |
| Lake Camp | 1/02 | 31 | 6.1 | 1.1 | 3.5 |
| Lewis Lake Divide | 12/28 | 92 | 26.7 | 2.9 | 17.0 |
| Lupine Creek | 1/03 | 28 | 3.1 | 1.6 | 4.4 a |
| Marquette Creek | 12/30 | 10 | 2.2 | - | - |
| Miles Creek | 12/27 | 30 | 7.8 | 1.5 | - |
| Moran | 12/29 | 32 | 8.0 | 1.4 | 5.3 |
| Norris Basin | 1/04 | 35 | 8.0 | 2.2 | 4.6 |
| Northeast Entrance | 12/31 | 32 | 7.6 | 2.6 | 3.6 |
| Old Faithful | 1/02 | 39 | 9.6 | 1.5 | - |
| Salt River Summit | 12/29 | 43 | 11.2 | 0.9 | 5.9 |
| Snake River Station | 12/28 | 54 | 14.8 | 2.0 | 8.2 |
| Snow King Mountain | 12/28 | 32 | 8.8 | 1.6 | 6.5 |
| Sylvan Pass | 1/01 | 43 | 10.3 | 3.8 | 5.9 |
| Thumb Divide | 12/28 | 41 | 9.9 | 1.3 | 9.2 a |
| Togwotee Pass | 12/29 | 72 | 21.4 | 3.7 | 14.6 a |
| Twenty-One Mile | 12/29 | 39 | 10.6 | 2.2 | 7.3 |
| West Yellowstone | 12/29 | 25 | 6.0 | 0.9 | 4.6 |
| White Mill | 12/27 | 73 | 21.0 | 5.2 | - |
| Wolverine | 12/30 | 37 | 9.2 | - | - |

SNOW

| DRAINAGE BASIN and/or SNOW COURSE | THIS YEAR | | | PAST REC. | |
|-----------------------------------|----------------|------------------|-------------------|------------------------|-------|
| | Date of Survey | Snow Depth (In.) | Water Cont. (In.) | Water Content (inches) | |
| | | | | Last Yr. | Ave.† |

| | | | | | |
|----------------------|------|----|------|---|---|
| <u>MAY 15, 1978</u> | | | | | |
| Bald Mountain Pillow | 5/17 | - | 42.7 | - | - |
| Big Goose | 5/22 | 36 | 13.1 | - | - |
| Bone Spring Divide | 5/22 | 78 | 29.8 | - | - |
| Cloud Peak Aerial | 5/23 | 63 | 23.3 | - | - |
| Dome Lake | 5/22 | 48 | 16.4 | - | - |
| Middle Powder | 5/14 | 59 | 23.3 | - | - |
| Middle Powder Pillow | 5/14 | - | 24.6 | - | - |
| Shell Creek | 5/22 | 64 | 23.1 | - | - |
| Soldier Park | 5/23 | 33 | 13.9 | - | - |
| Sucker Creek | 5/22 | 69 | 24.4 | - | - |
| Woodrock G.S. | 5/22 | 54 | 20.0 | - | - |
| Geneva Pass Aerial | 5/22 | 66 | 23.8 | - | - |

| | | | | | |
|---------------------------|-------------|------|------|------|--------|
| <u>JUNE 1, 1978</u> | | | | | |
| Aster Creek | 5/30 | 29 | 14.7 | - | - |
| Bald Mountain Pillow | 5/30 | - | 41.4 | - | - |
| Casper Mountain | 5/31 | 29 | 11.4 | - | - |
| Casper Mountain Pillow | 5/30 | - | 9.0 | - | - |
| Glade Creek | 5/30 | 0 | 0.0 | - | - |
| Grassy Lake | 5/30 | 38 | 20.0 | 0.0 | - |
| Huckleberry Divide | 5/30 | 9 | 4.4 | - | - |
| LaPrele Creek Pillow | 5/30 | - | 0.0 | - | - |
| Lewis Lake Divide | 5/30 | 69 | 38.9 | 0.0 | - |
| North French Creek Pillow | 5/30 | - | 41.7 | 13.6 | 18.1 a |
| Old Battle Pillow | 5/30 | - | 26.4 | - | - |
| Phillips Bench Pillow | 5/30 | - | 36.1 | - | - |
| Snake River Station | 5/30 | 10 | 4.8 | - | - |
| South Brush Creek Pillow | 5/31 | - | 0.0 | - | - |
| Togwotee Pass | Late Report | | | 9.8 | - |
| Webber Spring Pillow | 5/30 EST | 25.0 | - | - | - |

a Less than 15 years in period of average.

BASIC DATA

CORRECTIONS AND ADDITIONS

SNOW

| SNOW | THIS YEAR | | | PAST REC. | |
|--|----------------|------------------|-------------------|------------------------|-------|
| DRAINAGE BASIN and/or SNOW COURSE | Date of Survey | Snow Depth (In.) | Water Cont. (In.) | Water Content (inches) | |
| | | | | Last Yr. | Ave.† |
| <u>JANUARY 1, 1978</u> | | | | | |
| <u>Corrections</u> | | | | | |
| East Entrance | 1/01 | 37 | 8.5 | 1.6 | 4.2 |
| Sylvan Pass | 1/01 | 43 | 10.3 | 2.3 | 5.8 |
| <u>FEBRUARY 1, 1978</u> | | | | | |
| <u>Corrections</u> | | | | | |
| East Rim Divide | 1/28 | 50 | 13.4 | 2.2 | 9.4 |
| Gros Ventre Summit | 1/29 | 37 | 9.0 | 2.6 | 9.0 |
| Kendall R.S. | 1/29 | 45 | 13.8 | 3.0 | 9.6 |
| Triple Peaks | 1/27 | 95 | 32.0 | 4.2 | 18.6 |
| <u>Additions</u> | | | | | |
| Parkers Peak Aerial | 2/04 | 112 | 34.7 | 12.0 | - |
| Pitchstone Plateau A. | 2/13 | 187 | 67.3 | 14.6 | - |
| Two Ocean Plateau A. | 2/13 | 90 | 27.0 | 7.9 | - |
| Younts Peak Aerial (Ground Measurement) | 2/14 | 63 | 22.3 | 5.0 | - |
| <u>MARCH 1, 1978</u> | | | | | |
| <u>Corrections</u> | | | | | |
| East Rim Divide | 2/25 | 54 | 18.4 | 3.5 | 11.3 |
| Gros Ventre Summit | 2/26 | 48 | 9.6 | 2.8 | 11.4 |
| Kendall R.S. | 2/26 | 60 | 12.0 | 2.7 | 11.6 |
| Loomis Park | 2/25 | 67 | 26.3 | 4.6 | 16.3 |
| New Fork Lake | 2/25 | 52 | 16.4 | 2.3 | 11.2 |
| Triple Peaks | 2/28 | 102 | 38.3 | 5.6 | 23.2 |
| <u>Additions</u> | | | | | |
| Carter Mountain | 2/27 | 15 | 2.0 | 1.4 | 3.6 |
| Marquette Creek | 2/27 | 18 | 3.2 | 2.6 | - |
| <u>APRIL 1, 1978</u> | | | | | |
| <u>Corrections</u> | | | | | |
| Togwotee Pass Pillow | 3/30 | - | 30.6 | 12.8 | - |
| <u>Additions</u> | | | | | |
| Middle Powder | 4/09 | 27 | 7.0 | 19.0 | 12.6 |

SNOW

SNOW

| DRAINAGE BASIN and/or SNOW COURSE | THIS YEAR | | | PAST REC. | |
|-----------------------------------|----------------|------------------|-------------------|------------------------|-------|
| | Date of Survey | Snow Depth (In.) | Water Cont. (In.) | Water Content (inches) | |
| | | | | Last Yr. | Ave.† |
| MAY 1, 1978 | | | | | |
| Corrections | | | | | |
| Dinwoody | 5/02 | 51 | <u>11.9</u> | 3.9 | 14.3 |
| Hobbs Park | 5/02 | 46 | <u>7.4</u> | 7.2 | 17.4 |
| Larsen Creek | 5/02 | 41 | <u>15.2</u> | 0.0 | 11.5 |
| North Tongue | 5/02 | 39 | <u>15.2</u> | 14.2 | 15.1 |
| Phillips Bench | 4/28 | 94 | <u>41.4</u> | 15.0 | - |
| Pocket Creek | 5/02 | 54 | <u>19.9</u> | 2.5 | 13.9 |
| Ranger Creek | 4/30 | <u>31</u> | <u>12.4</u> | 6.2 | 9.9 |
| Snow King Mountain | 4/27 | 30 | <u>14.2</u> | 0.0 | 12.2 |
| Sour Dough | 4/30 | 24 | <u>7.3</u> | 3.4 | 7.4 |
| Additions | | | | | |
| Beartrap Aerial | 5/02 | 27 | 9.7 | - | - |
| Cloud Peak Aerial | 4/30 | 42 | 13.4 | - | - |
| Geneva Pass Aerial | 4/30 | 56 | 17.9 | - | - |
| Teton Pass W.S. | 4/28 | 68 | 33.2 | 7.8 | - |

Corrected figure is underlined.

PRECIPITATION (Inches) FOR MONTH OF MAY

| PRECIPITATION (Inches) | | FOR MONTH OF MAY | | CURRENT INFORMATION | | PAST RECORD | |
|--|-------|------------------|-----------------|---------------------|-----------|-------------|---|
| DRAINAGE BASIN and PRECIPITATION GAGE LOCATION | | ELEVATION | Date of Reading | Precipitation | Last Year | Average | † |
| LOWER YELLOWSTONE | | | | | | | |
| Powder River Pass | 9475 | 5/25 | 12.31 | 3.72 | 2.62* | | |
| NORTH PLATTE | | | | | | | |
| Arrastre Lake | 10280 | 5/31 | 9.90 | - | - | | |
| Casper Mountain | 7850 | 5/31 | 10.22 | 3.19 | 4.58* | | |
| LaPrele Creek | 8375 | 5/30 | 5.60 | - | - | | |
| North French Creek | 10130 | 5/30 | 9.50 | 6.31 | 3.27* | | |
| Old Battle | 9900 | 5/30 | 4.40 | 6.63 | 3.50* | | |
| Pole Mountain | 8360 | 6/01 | 5.55 | - | - | | |
| South Brush Creek | 8440 | 5/31 | 5.90 | 5.40 | - | | |
| GREEN RIVER | | | | | | | |
| East Rim Divide | 7950 | 5/30 | 1.85 | 2.25 | 2.24* | | |
| SNAKE RIVER | | | | | | | |
| Grassy Lake | 7265 | 5/30 | 4.80 | 6.45 | 3.60* | | |
| Grover Park Divide | 7000 | 5/30 | 4.50 | 4.05 | - | | |
| Lewis Lake Divide | 7860 | 5/30 | 4.20 | 4.10 | 3.25* | | |
| Salt River Summit | 7600 | 5/30 | 3.12 | 3.38 | 1.06* | | |
| * Average does not contain 15 years of record. | | | | | | | |

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WATER SUPPLY OUTLOOK FOR WYOMING

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